

WHAT IS CLAIMED IS:

1. An ophthalmic laser surgical apparatus including:

a laser irradiation optical system which irradiates a laser beam which causes ablation on tissue of an eye;

5 a sound collecting unit which receives a shock sound which is generated during the ablation of the eye tissue; and

a monitor unit which is connected to the sound collecting unit and detects a degree of dryness of the eye tissue during the ablation based on a sound pressure level of a sound signal from the sound collecting unit.

10 2. The ophthalmic laser surgical apparatus according to claim 1, wherein the monitor unit determines whether the degree of dryness of the eye tissue during the ablation is appropriate by comparing between the sound pressure level during the ablation and a reference sound pressure level.

15 3. The ophthalmic laser surgical apparatus according to claim 2 further including an announcement unit which announces a result of determination on appropriateness of the degree of dryness.

20 4. The ophthalmic laser surgical apparatus according to claim 1, wherein the monitor unit determines a state of change in the sound pressure level during the ablation with respect to a reference sound pressure level.

25 5. The ophthalmic laser surgical apparatus according to claim 4 further including an announcement unit which announces the state of change in the sound pressure level.

6. The ophthalmic laser surgical apparatus according to claim 4, wherein the monitor unit determines a state of change in an ablation rate during the ablation with respect to a reference ablation rate based on the state of change in the sound pressure level.

7. An ophthalmic laser surgical apparatus including:

a laser irradiation optical system which irradiates a laser beam which causes ablation on tissue of an eye while changing at least one of an irradiation position and an irradiation area;

a sound collecting unit which receives a shock sound which is generated during the ablation of the eye tissue; and

a calculation unit which is connected to the sound collecting unit and corrects data on control of the laser irradiation optical system based on a sound pressure level of a sound signal from the sound collecting unit.

8. The ophthalmic laser surgical apparatus according to claim 7 further including a memory which stores a relationship between a sound pressure level and an ablation rate,

wherein the calculation unit corrects the control data based on the ablation rate corresponding to the sound pressure level during the ablation.

9. The ophthalmic laser surgical apparatus according to claim 7, wherein the laser irradiation optical system includes at least one of a scanning unit which moves a laser beam to scan and an aperture unit which restricts an irradiation area of the laser beam.